

## TITLE: FAN BLADE CUT OFF SYSTEM

### FIELD OF THE INVENTION

This application is a continuation in part of my application filed on August 20, 2002, Serial Number 10/223,303.

- 5     The present invention relates to a fan blade cut off system. This fan structure deals with a filtration layer being employed on the blade to protect the fan by cutting off the power when the mesh cover is disengaged.

### BACKGROUND OF THE INVENTION

- 10     US Patent Nos. 4,477,262; 4,781,525; 6,045,329; 6,254,726 and 6,368,393 disclose the teaching of having incorporated a filtration layer to the external surface of a fan blade. Wherein, the filtration layer is provided at where outside the space available for the rotation of the blade by forcing air to be either sucked or blown through the filtration layer for air filtration.

- 15     However, the filtration layer will clog after a period of time and requires to be replaced. This requires disengaging of the mesh. If a user does not remember to unplug the electric cord and touch the switch to activate the fan accidentally, which may cause injury to the user.

### SUMMARY OF THE INVENTION

- 20     It is the primary object of the present invention to provide a fan blade cut off system, which is safe to a user.

It is another object of the present invention to provide a fan blade cut off system, which corresponds to environmental requirement.

It is a further object of the present invention to provide a fan blade cut off system, which is easy to operate.

### 25     BRIEF DESCRIPTON OF THE DRAWINGS

FIG. 1 is an exploded view of the present invention;

FIG. 2 is a side view of the present invention; and

FIG. 3 is an enlarged view taken along the circle 3 of FIG. 2.

## DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

Referring to Fig. 1, the present invention comprises blades (1), a mesh seat (2), a mesh cover (3), a smoke detector (4), an ion generator (5), a conductor (6), and a conductive plate (7). Each blade (1) is fixed with a filtration layer (11) containing active carbon, jointly driven by a motor (not illustrated, nor elaborated due to the motor is a prior art). The mesh seat (2) is provided behind the blades (1). The mesh cover (3) is buckled to the mesh seat (2) by means of a locking slat (31). The smoke detector (4), the ion generator (5) and the conductor (6) are all mounted on the mesh seat (2). A wire tube (51) is adapted to the ion generator (5) to connect the wires (prior art/not illustrated) from the smoke detector (4), the ion generator (5) and the conductor (6) to a control circuit board (prior art, not illustrated, nor elaborated) of the electric fan. The conductor (6) is in its normally off status. The conductive plate (7) is provided on the mesh cover (3) in relation to the conductor (6). As illustrated in Figs. 2 and 3, the conductor (6) is conducted when the mesh cover (3) is buckled to the mesh seat (2), thereby, when the smoke detector (4) automatically detects excessive smoke in the air, it sends signals to the control circuit board to command the blades (1) to rotate. Meanwhile, the ion generator (5) is also activated for the filtration layer (11) to filter the air and to de-odorize and sterilize the air jointly by the active carbon in the filtration layer (11) and ions generated from the ion generator (5) to improve air quality.